

Canceled claims 1-2, 6 and 8 were rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 4,692,726 to Green (the Green Patent). The Office Action cites col. 3, lines 50-52 of Green which is reproduced below together with a few preceding lines for ready reference.

*Tuning of filter 100 may be accomplished by the removal of additional ground plating or resonator plating extending upon the top surface of the block 105 near the top of each plated hole. The removal of plating for tuning the filter can easily be automated, and can be accomplished by means of a laser, sandblast trimmer, or other suitable trimming devices while monitoring the return loss angle of the filter (Emphasis Added).*

The Green Patent is describing a post-patterning tuning step in which "the return loss angle of the filter" is monitored. In other words, the electrical performance of the filter is being measured as "additional" metal is removed.

The Green Patent does not describe or suggest any of the following features of the present invention:

- a covering step that fully coats or encases the block with a conductive layer;
- forming the metallization pattern by ablative etching;
- that the etching forms unmetallized areas recessed into the block; or
- a post ablation heat treatment.

Canceled claims 3-5 were rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent No. 5,769,988 to Kagata (the Kagata Patent). With regard to canceled claim 5 and the new claims, the Kagata Patent does not teach or suggest ablative etching a metallization pattern, that the etching form can form unmetallized areas recessed into the block or that a post ablation heat treatment is necessary.

Canceled claims 7, 9-11 and 13-17 were rejected under 35 U.S.C. 103(a) as unpatentable over the Green Patent in view of U.S. Patent No. 5,999,070 to Endo. The Endo Patent offers no suggestion as to how the deep spaces, Endo calls Grooves, are made in the dielectric block. Several of the Endo Patent embodiments show deep internal spaces covered with a conductive coating. Please see, for an example, FIG. 2 (no. 41) and the corresponding description at column 4, lines 11-12. The coated internal spaces suggest that a process including ablative etching of the coating together with some dielectric material is not even compatible with the structures of the Endo Patent.

Moreover, the Endo Patent directly teaches away from the use of a pattern of metallized and unmetallized areas as called for by the pending claims:

*However, with the aggressive miniaturization going on at present in mobile communication devices, which constitute a vital application for this type of dielectric filter, continued miniaturization is also required of the block type dielectric filters that constitute a component thereof and it is becoming physically difficult to further vary the size of the dielectric block, to add minute electrode patterns or to form minute indented portions.*

col. 1, lines 34-41.

*The setting of the resonance frequency in the present invention is achieved by selecting a specific position, shape or the like for the groove formed at the dielectric block, and it is not necessary to change the size of the dielectric block or to add minute electrical patterns.*

col. 2, lines 34-38 (*emphasis added*).

*The adjustment of the resonance frequency according to the present invention is executed by selecting a specific position, shape and the like for the groove 41 formed at the dielectric block 1. As a result, it is not necessary to vary the size of the dielectric block 1 or to add minute electrode patterns.*

col. 4, lines 3-7 (*emphasis added*).

The Endo Patent teaches away from the invention defined by the present claims, which embrace an electrode pattern and the pattern miniaturization requirements. A "reference must be considered for all it teaches, including disclosures that teach away from the invention as well as disclosures that point toward the invention." Ashland Oil, Inc. v. Delta Resins & Refractories, Inc. 227 U.S.P.Q. 657 (Fed. Cir. 1985)(*emphasis added*).

Canceled claim 12 was rejected under 35 U.S.C. 103(a) as unpatentable over the Green Patent in view of the Endo Patent and in further view of the Kagata Patent. As noted above, the Kagata Patent does not teach or suggest ablative etching a metallization pattern, that the etching form can form unmetallized areas recessed into the block or, in particular, that a post ablation heat treatment is necessary.

**Version With Markings To Show Changes Made**

The paragraph starting at page 5, line 1 has been corrected as follows:

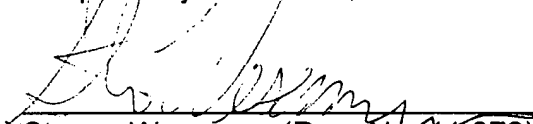
FIG. 1 is a perspective view of a prior art ceramic band-pass filter. Filter 10 is formed of a ceramic block with some surfaces having a conductive metal plate thereon and includes a top face 12, a bottom face 14, side faces 16 and 18, and end faces 20 and 22. Filter 10 further comprises parallel cylindrical bores 24 and 26 that openly extend between top face 12 and bottom face 14. Regions of the ceramic block surfaces, such as top surface or face 12, are screen-printed, in a well-known manner, with conductive metal material such as a silver paste to form metallic elements of the filter leaving the bare ceramic surface material of the ceramic block between the filter elements. The printed elements 36 and 38 rise above the top face of planar surface 12 of the ceramic block and include an input pad 28 and an output pad 30 that may wrap around between top face 12 and side face 16. The wraparound configuration is particularly adapted for surface-mount connections when a filter is subsequently incorporated into an electronic package. The side faces 16 and 18, bottom face 14, and end faces 20 and 22 are covered with a continuous metal plate that forms a ground element 32. At face 16, ground plate 32 is separated from input pad 28 and output pad 30 by bare ceramic regions 34 and 35 to prevent electrical short-circuiting. These bare ceramic regions 34 and 35 are created when the I/O pads are screen-printed on the ceramic substrates. Through-holes [26 and 28] 24 and 26 are coated with conductive metal that . . . {no further changes}

The prior art made of record but not relied upon has been studied with interest. None of the cited patents are believed to vitiate the patentability of the present claims, however.

For the foregoing reasons, Applicants respectfully submit that new claims 27-38 are patentable over the identified prior art. Entry of the amendments and passing of this application to issue is respectfully requested.

Please charge any deficiency associated with this amendment to our Deposit Account No. 03-1677.


Respectfully Submitted,

  
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CERTIFICATE OF MAILING

I hereby certify that this AMENDMENT AND RESPONSE is being deposited with the United States Postal Service as first class mail on 16 May 2002 in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231.

  
Joan C. Ramm

16 May 2002  
Date